

Fort River Elementary School

Feasibility Study – Draft School Committee Presentation

November 20, 2018



TSKP ARCHITECTURE | PLANNING | INTERIORS
STUDIO

Design Quality | Simple... Child Friendly

DRAFT



Design Quality | Age Appropriate Scale

DRAFT



Design Quality | Natural Light... Welcoming

DRAFT



Design Quality | Multi-functioning Space

DRAFT



Design Quality | Beautiful and Durable

DRAFT



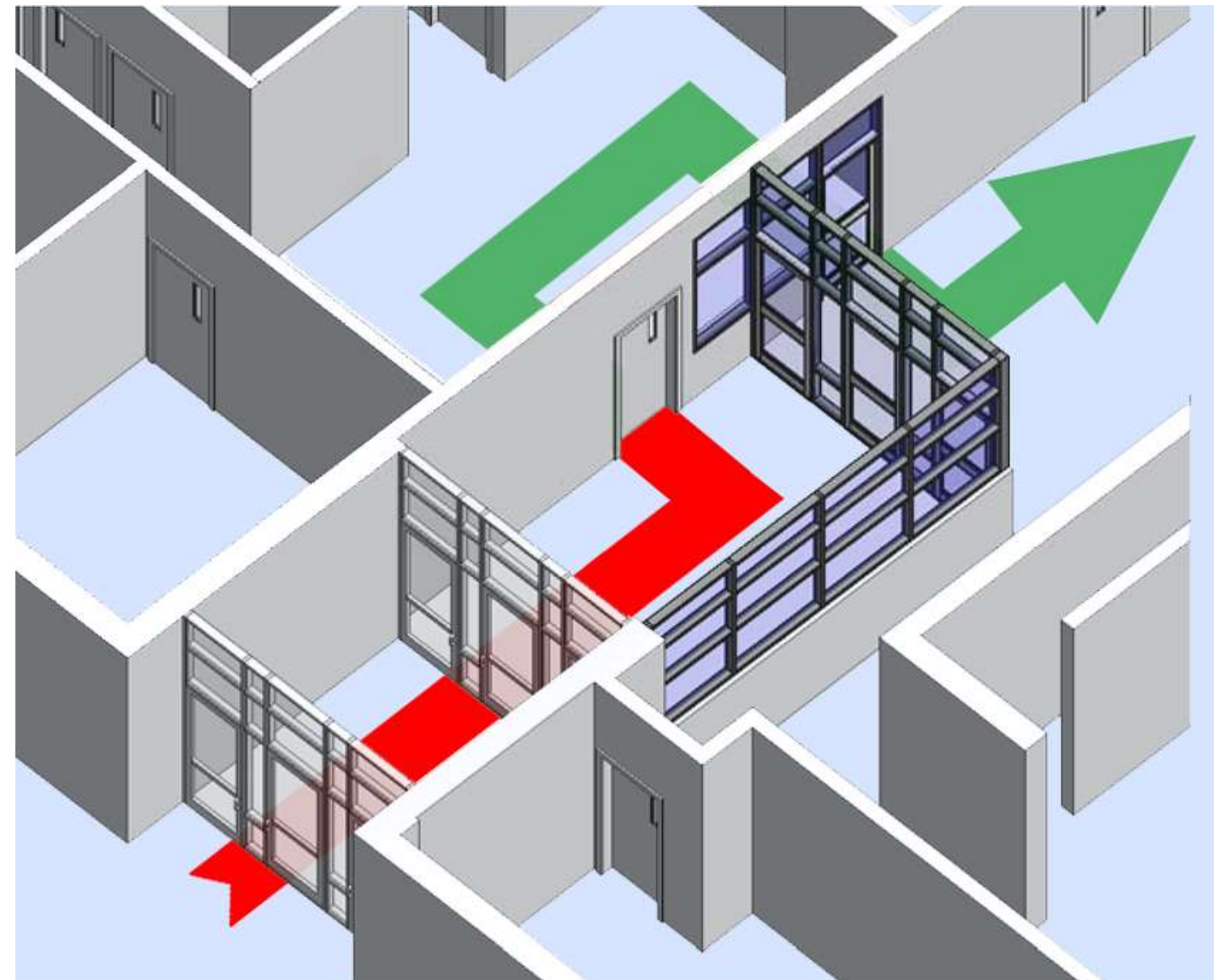
Design Quality | Connections to the Outdoors

DRAFT



Design Quality | Security + Safety

DRAFT



DRAFT

Existing Conditions Investigations

Existing Conditions | **Summary**

1. Deferred Capital Infrastructure Replacement Items

- ✓ Roof
- ✓ HVAC system
- ✓ Electrical system
- ✓ Window Replacement

2. Unsatisfied Educational Needs

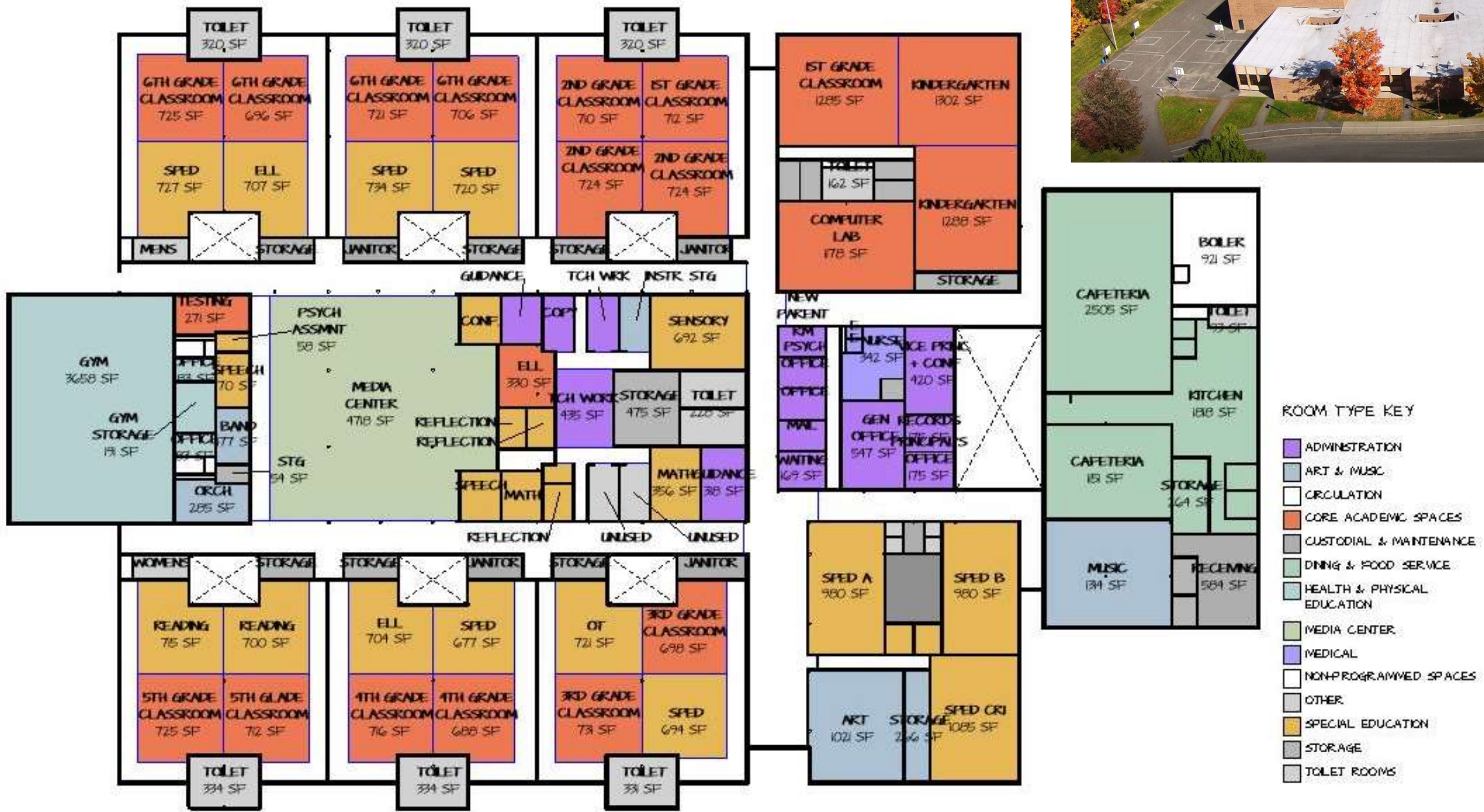
- ✓ Open Classrooms
- ✓ Accessibility
- ✓ Lighting
- ✓ Communication Systems
- ✓ Technology Infrastructure
- ✓ Interior Environment

3. Security

- ✓ Access Control
- ✓ Passive Surveillance, Building Exterior hardening, Classroom Security



Existing Conditions | Summary



Existing Conditions | Roof

DRAFT



Existing Conditions | Exterior Walls

DRAFT



Existing Conditions | Systems

DRAFT



Left, Exterior unit ventiator louver condition. Right, Classroom unit ventilator.

Left, New condensing boilers. Right, Dual temp and hot water pumps.



Left, Gym unit. Right, Library unit

Existing Conditions | Open Classrooms

DRAFT



Existing Conditions | Daylighting

DRAFT



Existing Conditions | Accessibility

DRAFT



Existing Conditions | Site Accessibility

DRAFT



Swings to the north of the school yard are overgrown and access off of the adjacent asphalt path isn't accessible.



Outdoor classrooms and gardens are in the northeast portion of the schoolyard, but aren't fully accessible.



Existing picnic table is overgrown and not fully accessible.



Access ramp rail is bent and no longer meets the new ADA regulations for railings. Detectable warning strips are also missing.



Low points in paving collect water and may freeze in the winter. Existing curb in parking areas at minimal heights due to repaving.



View looking east on the asphalt path connection to Main Street/ Pelham Road. Moss is covering path, large cracks and light post leaning at various angles.



Detectable warning strips missing at many crosswalks within the school property. Cracking and rutting throughout paved areas.

DRAFT

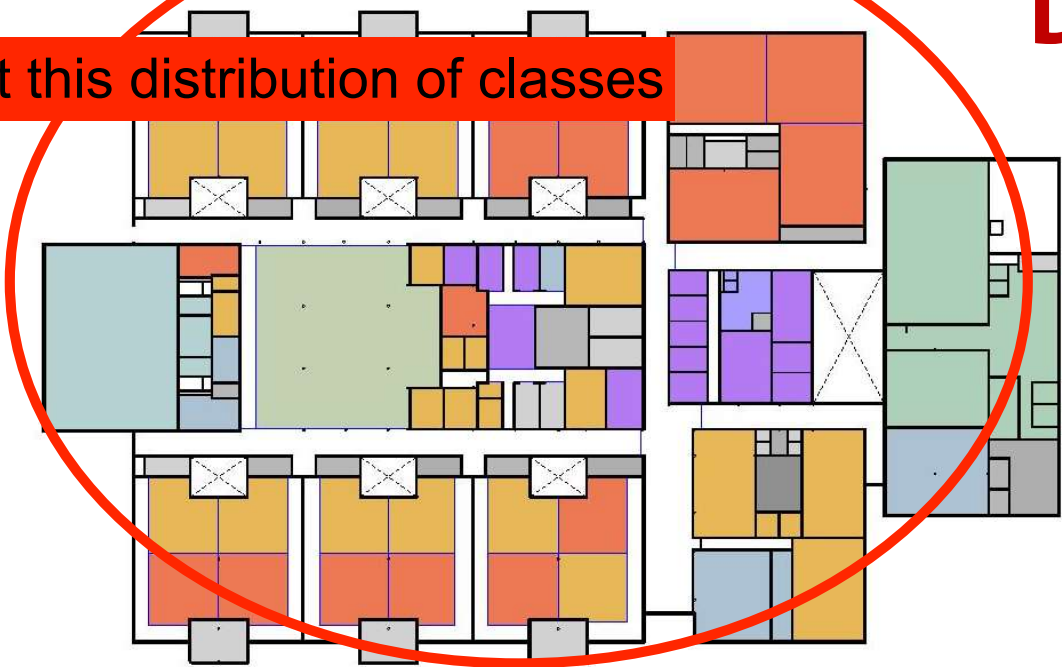
Enrollment Analysis

Enrollment Analysis | K-6 Enrollment

DRAFT

	Current K-6 Enrollment	Future K-6 Enrollment with Dual Language at FR
Fort River	315	420
Wildwood	416	367
Crocker Farm	345	296
District Total	1076	1083

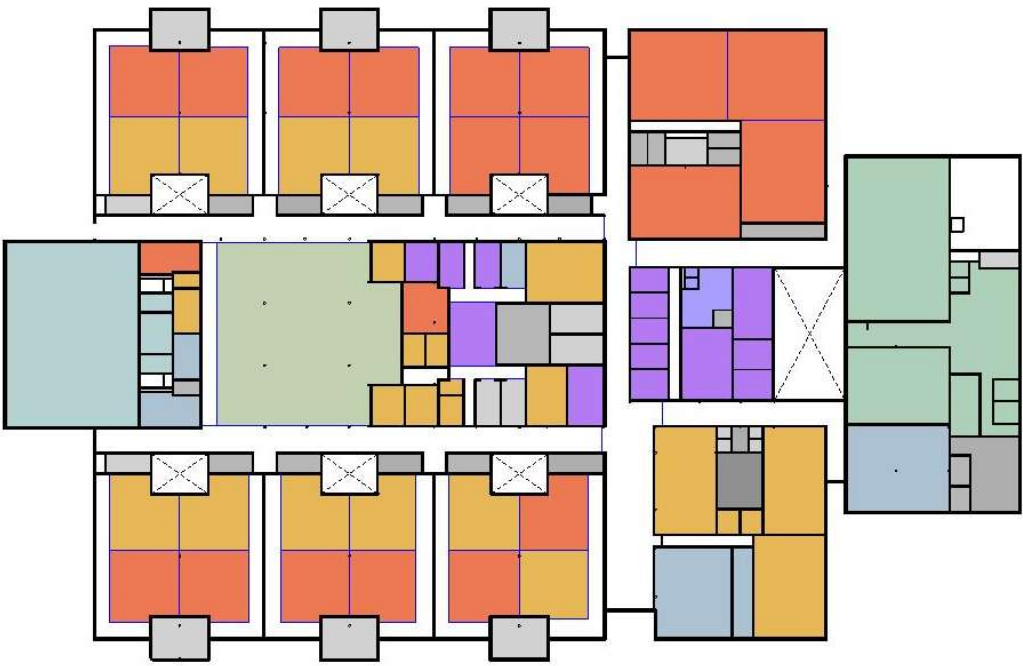
not this distribution of classes



Wildwood



Crocker Farm



Fort River

DRAFT

Educational Space Needs

Educational Space Needs | Right Size

DRAFT

	Fort River Study Enrollment Range			
K-6 Enrollment	315 ← → 420			
Pre-K Enrollment (FTE)	0	45	0	45
Total Enrollment	315	360	420	465
Total Building Gross Floor Area	70,000	77,000	78,000	84,000

Educational Space Needs | Right Size

DRAFT

	Fort River Study Range				MSBA guidelines
K-6 Enrollment	315 ← → 420				420
Pre-K Enrollment (FTE)	0	45	0	45	45
Total Enrollment	315	360	420	465	465
Total Building Gross Floor Area	70,000	77,000	78,000	84,000	72,742

Compared to MSBA guidelines:

Amherst Classroom Guidelines		4,725
District SE (AIMS, Bldg. Blocks)		5,917
Pre-K Administration and Support		1,743
MSBA guideline (adjusted)		85,127

Educational Space Needs | Right Size

DRAFT

	Fort River	Wildwood	Crocker Farm
K-6 Enrollment	315	416	345
Pre-K Enrollment (FTE)	0	0	75
Total Enrollment	315	416	420
Total Building Gross Floor Area	78,064	78,064	71,301

Fort River Study Enrollment Range			
315 ← → 420			
0	45	0	45
315	360	420	465
70,000	77,000	78,000	84,000

Educational Space Needs | Right Size

DRAFT

	Fort River	Wildwood	Crocker Farm
K-6 Enrollment	315	416	345
Pre-K Enrollment (FTE)	0	0	75
Total Enrollment	315	416	420
Total Building Gross Floor Area	78,064	78,064	71,301

Fort River Study Enrollment Range			
315		420	
0	45	0	45
315	360	420	465
70,000	77,000	78,000	84,000

Compared to Crocker Farm:

Gymnasium size (per MSBA)		4,902
District SE (AIMS, Bldg. Blocks)		5,917
Crocker Farm (adjusted)		82,120

Educational Space Needs | Fort River Rooms + Educational Program

DRAFT

Table of Contents

Amherst Public Schools District Mission.....	1
Guiding Principles.....	3
21 st Century Learning Goals.....	3
Grade & School Configuration Policies.....	4
Class Size Policies.....	5
School Scheduling Method.....	5
Teaching Methodology and Structure.....	10
Technology Infrastructure, Policies & Requirements ..	18
Teacher Planning and Room Assignment Policies.....	20
Special Education Programs.....	21
ELL Program.....	24
Transportation Policies.....	24
Lunch Programs	25
Functional Relationships & Key Adjacencies.....	25
Security & Visual Access Requirements.....	26
Acknowledgments.....	28

CORE ACADEMIC SPACES	
Pre-Kindergarten w/ toilet	3
Kindergarten w/ toilet	3
General Classrooms - Grade 1-6	18
Computer Lab / Maker Space	1
Break out Teaching Space (1 per grade 1-6)	6
SPECIAL EDUCATION	
Large group SE	1
Small group SE	2
Self-Contained SPED - toilet	3
AIMS Program	1
AIMS Program - Reflection Room	1
Building Blocks Program	2
Building Blocks Program - Reflection Room	2
ELL classrooms	2
Speech	2
Math	1
Assessment Room	1
Sensory	1
Office for ETL	1
Reflection Room	2
Reading	2
Occupational Therapy / Physical Therapy	1
Speech for PK	1
OT/PT for PK	1
Behavior Analyst for PK	1
ART & MUSIC	
Art Classroom - 25 seats	1
Art Workroom w/ Storage & kiln	1
Music Classroom / Large Group - 25-50 seats	1
Instrumental Music (6-8 students)	2
HEALTH & PHYSICAL EDUCATION	
Gymnasium	1
Gym Storeroom	1
Health Instructor's Office w/ Shower & Toilet	1
MEDIA CENTER	
Media Center / Reading Room	1
DINING & FOOD SERVICE	
Cafeteria / Dining	1
Stage	1
Chair / Table / Equipment Storage	1
Kitchen	1
Staff Lunch Room	1
MEDICAL	
Medical Suite Toilet	1
Nurses' Office / Waiting Room	1
Examination Room / Resting	2
ADMINISTRATION & GUIDANCE	
General Office / Waiting Room / Toilet	1
Teachers' Mail and Time Room	1
Duplicating Room	1
Records Room	1
Principal's Office w/ Conference Area	1
Principal's Secretary / Waiting	1
Assistant Principal's Office	1
Supervisory / Spare Office	1
Conference Room	1
Guidance Office	2
Guidance Office	1
Guidance Storeroom	1
Teachers' Work Room	2
Psychologist's Office	1
Parent Room	1
PK Coordinator w/Conf	1
CUSTODIAL & MAINTENANCE	
Custodian's Office	1
Custodian's Workshop	1
Custodian's Storage	1
Recycling Room / Trash	1
Receiving and General Supply	1
Storeroom	1
Network / Telecom Room	1

DRAFT

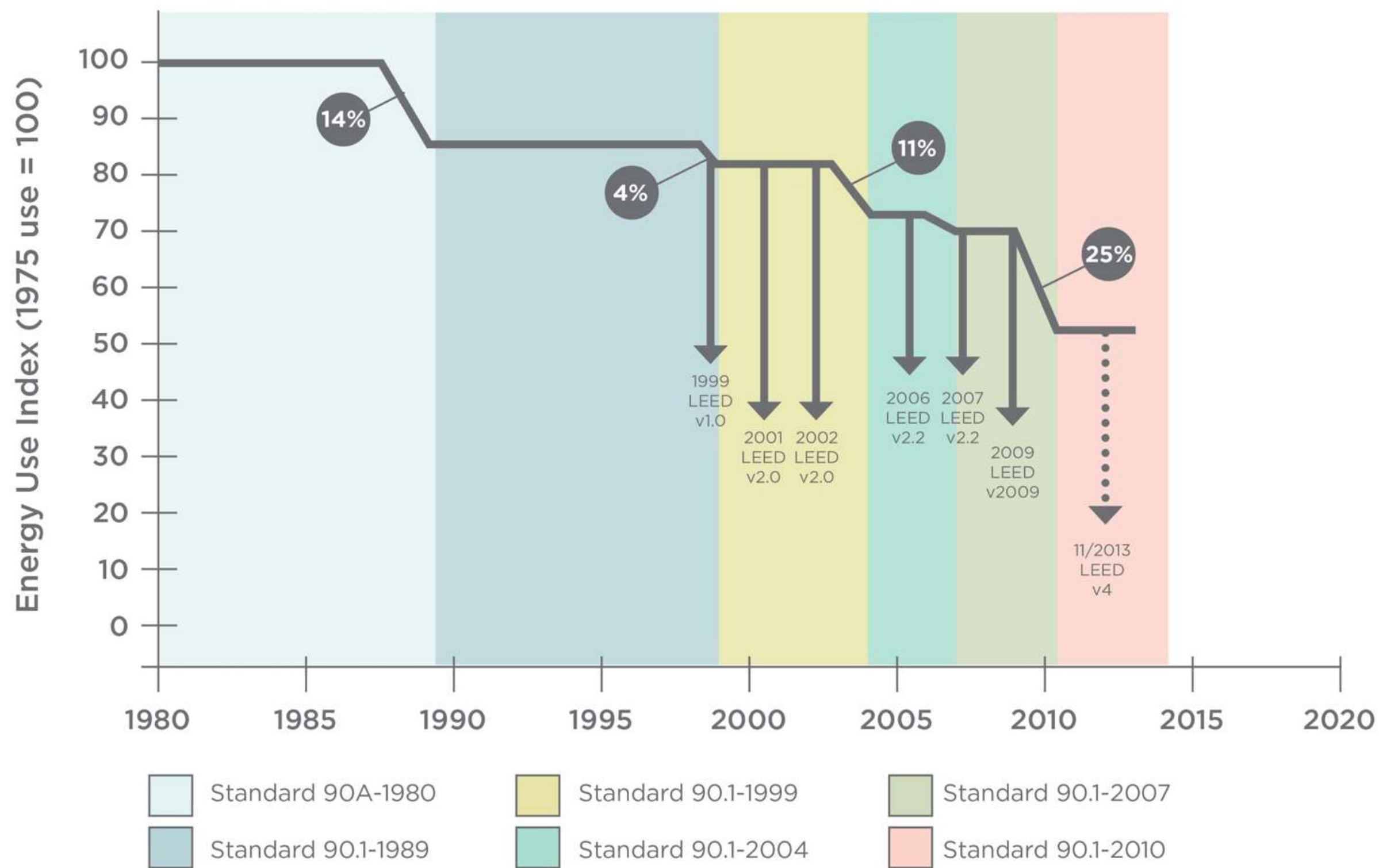
Sustainability and Net Zero

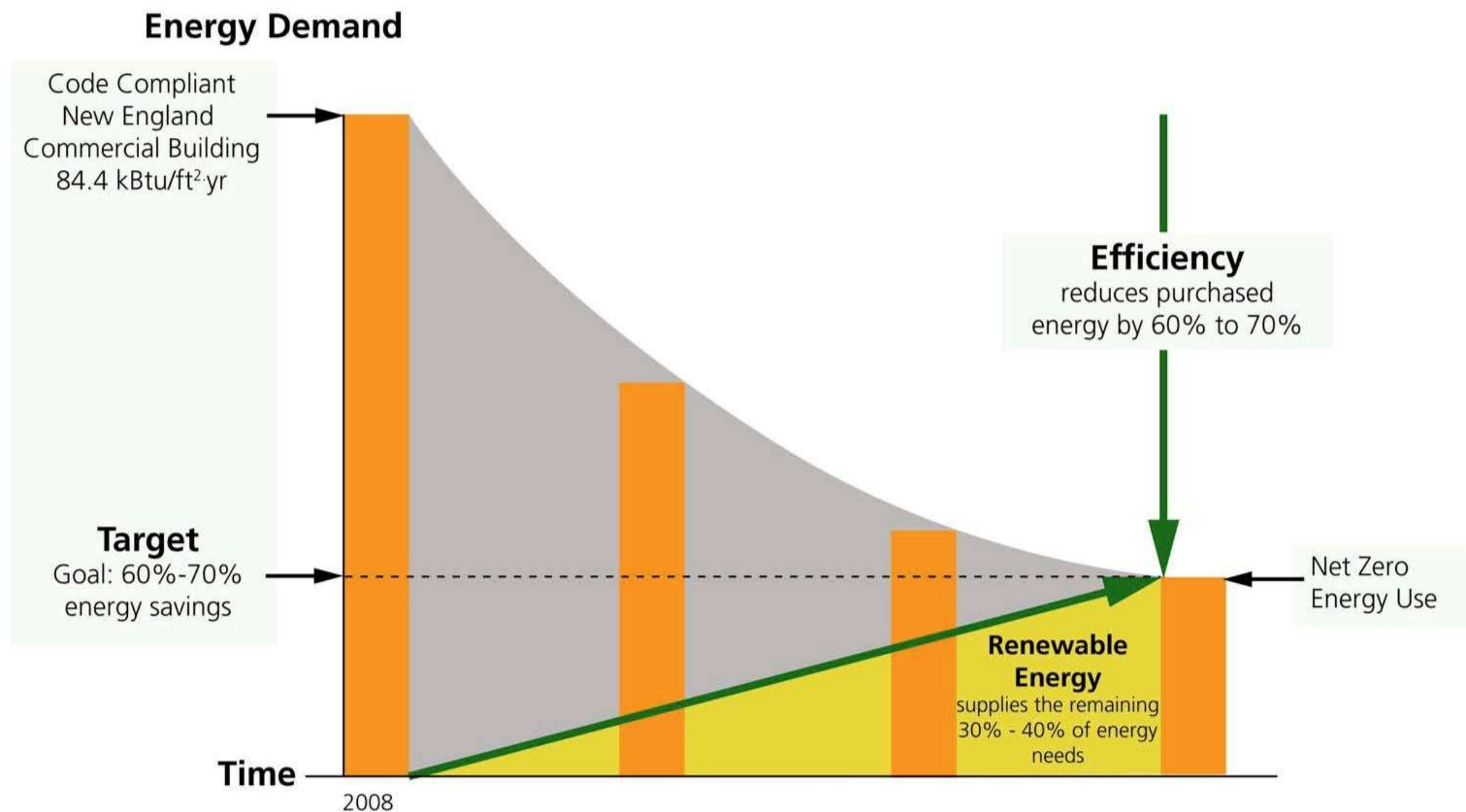
DRAFT

What makes it sustainable?

- Safe and Healthy
- Resource Efficient
- Flexible and Adaptable
- Durable and Maintainable

Energy Codes and LEED Requirements





Source: Federal R&D Agenda for Zero-Net Energy high Performance Green Buildings, National Science and Technology Council, October 2008

Possible Energy Targets for Fort River

Target	Energy Star Score	Site EUI (kbtu/sf/yr)	Source EUI (kbtu/sf/yr)	Energy Cost (\$/yr)
Average	50	65.6	110.7	\$116,947
Energy Star	75	49.6	83.7	\$88,439
High Performance	90	38.1	64.2	\$67,811
“Green Building”	95	32.4	54.7	\$57,821
Net Zero	100	0	0	0

Energy Star represents a 24% reduction compared to Average
 High Performance represents a 42% reduction compared to Average
 Green Buildings represents a 51% reduction compared to Average
 Net Zero represents a 100% reduction compared to Average



Massachusetts School Building Authority

Funding Affordable, Sustainable, and Efficient Schools in Partnership with Local Communities

DRAFT
DRAFT

Minimum Requirements for funding:

- 1) LEED v4 Certified, or NE-CHPS Verified
- 2) 10% better than energy code

2% additional reimbursement for projects that can exceed energy code by at least 20%

System Description	Plant	Initial Cost	Operational Cost	Maintenance	Equipment Filters in Zone
Option #1 – Air Cooled VRF	Air-Cooled (Electric)	2	5	2	Yes
Option #2 – Water Cooled VRF	Geothermal	5	3	4	Yes
Option #3 – Water Cooled VRF	Cooling Tower & Boiler	3	4	6	Yes
Option #4 – Water Cooled GSHP & Chilled Beams	Geothermal	6	1	3	No
Option #5 - Water Cooled HP & Chilled Beams	Cooling Tower & Boiler	4	2	5	No
Option #6 – VAV, DX RTU's	Air-Cooled (Electric)	1+	6	1	No

1 = Lowest

6 = Highest

DRAFT
Equipment
Filters in Zone

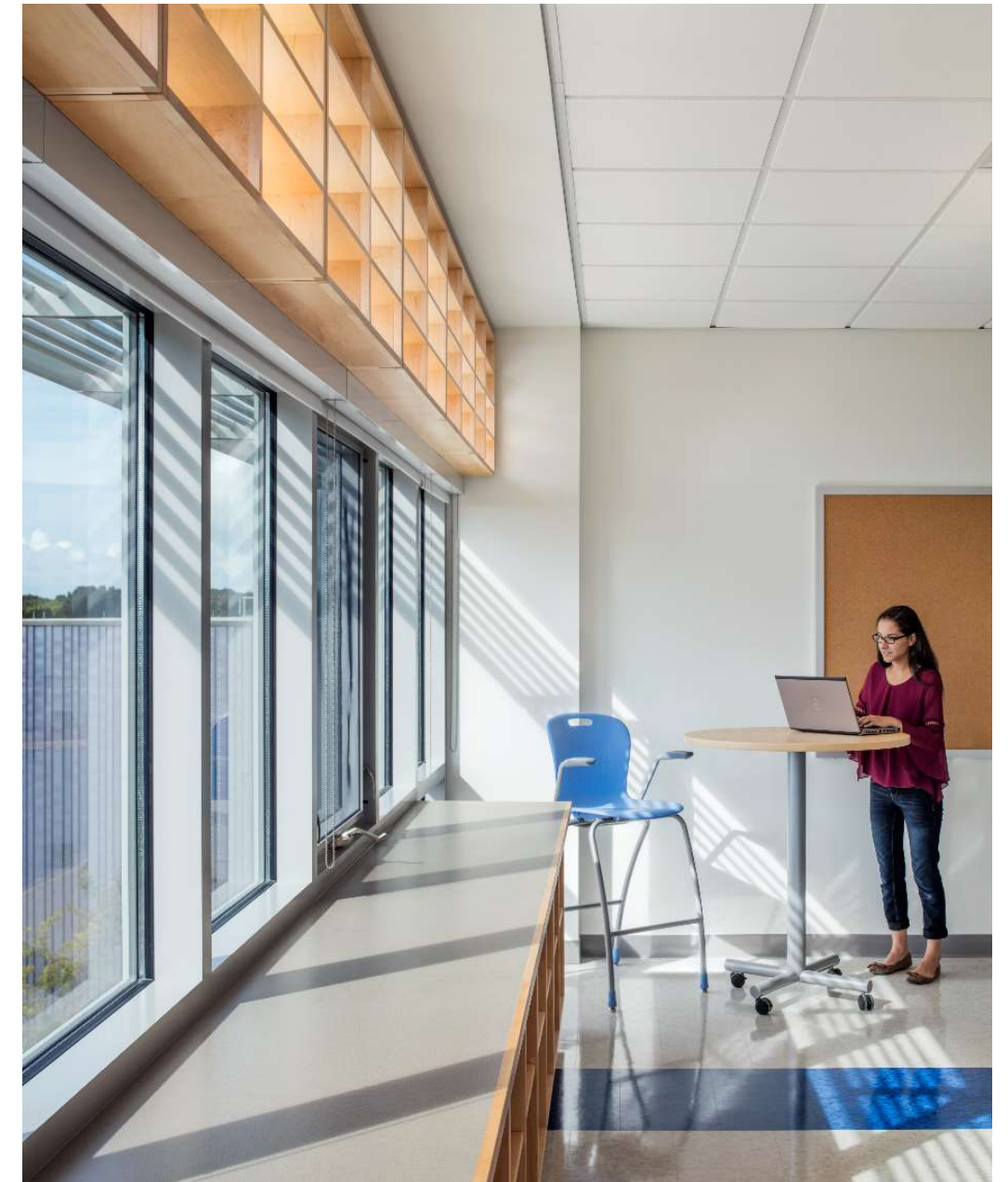
DRAFT

Design Options

Design Options | **Non-Negotiables**

Included in Options A – E:

- ✓ Natural Light in all Classrooms
- ✓ Good air quality / ventilation / circulation
- ✓ Good Acoustics (ANSI S12.60)
- ✓ Elimination of open classroom design
- ✓ Compliance with Town's Net Zero bylaw
- ✓ Sustainable design
- ✓ Flexibility in case of increased enrollment in the future
- ✓ Adequate space for program needs
- ✓ Cost and Environmental analysis that includes construction, demolition, swing space, operations



Design Options | Range of Options

DRAFT



NEW BUILDING



2 STORY ADDITION



1 STORY ADDITION



TWO SMALL
ADDITIONS



SMALL ADDITION



BASE REPAIR

A

B

C

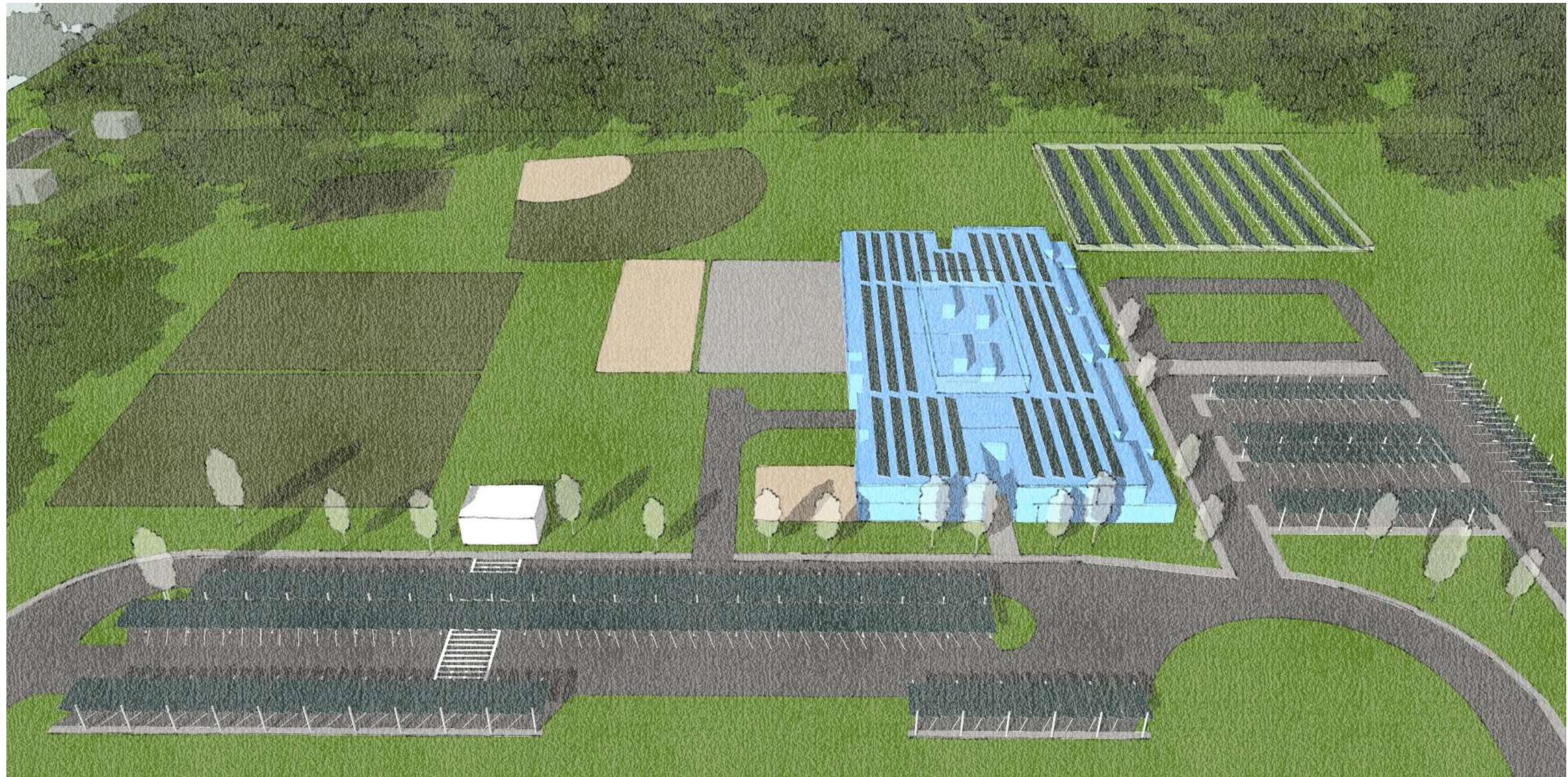
D

E

F

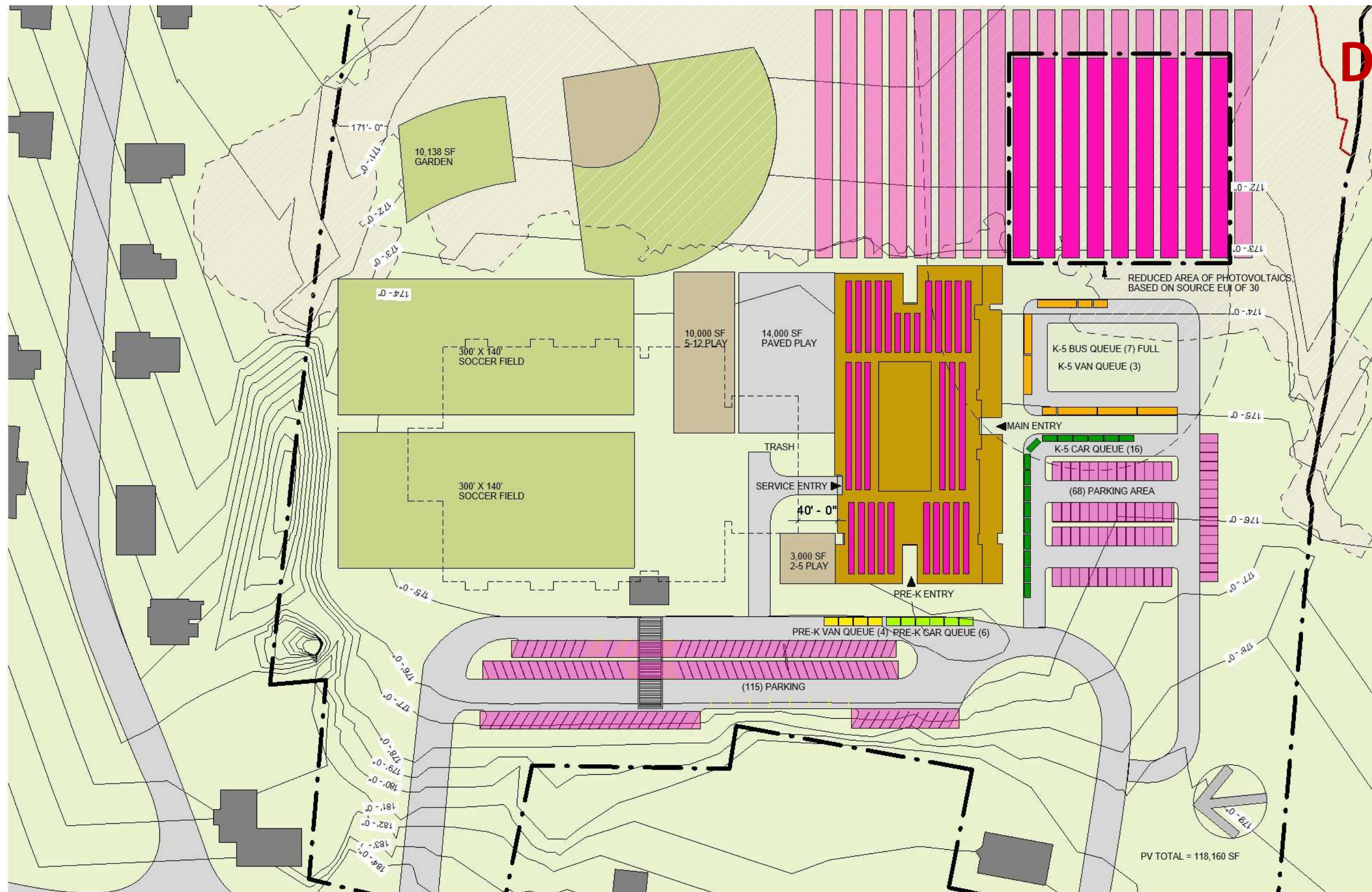


DRAFT

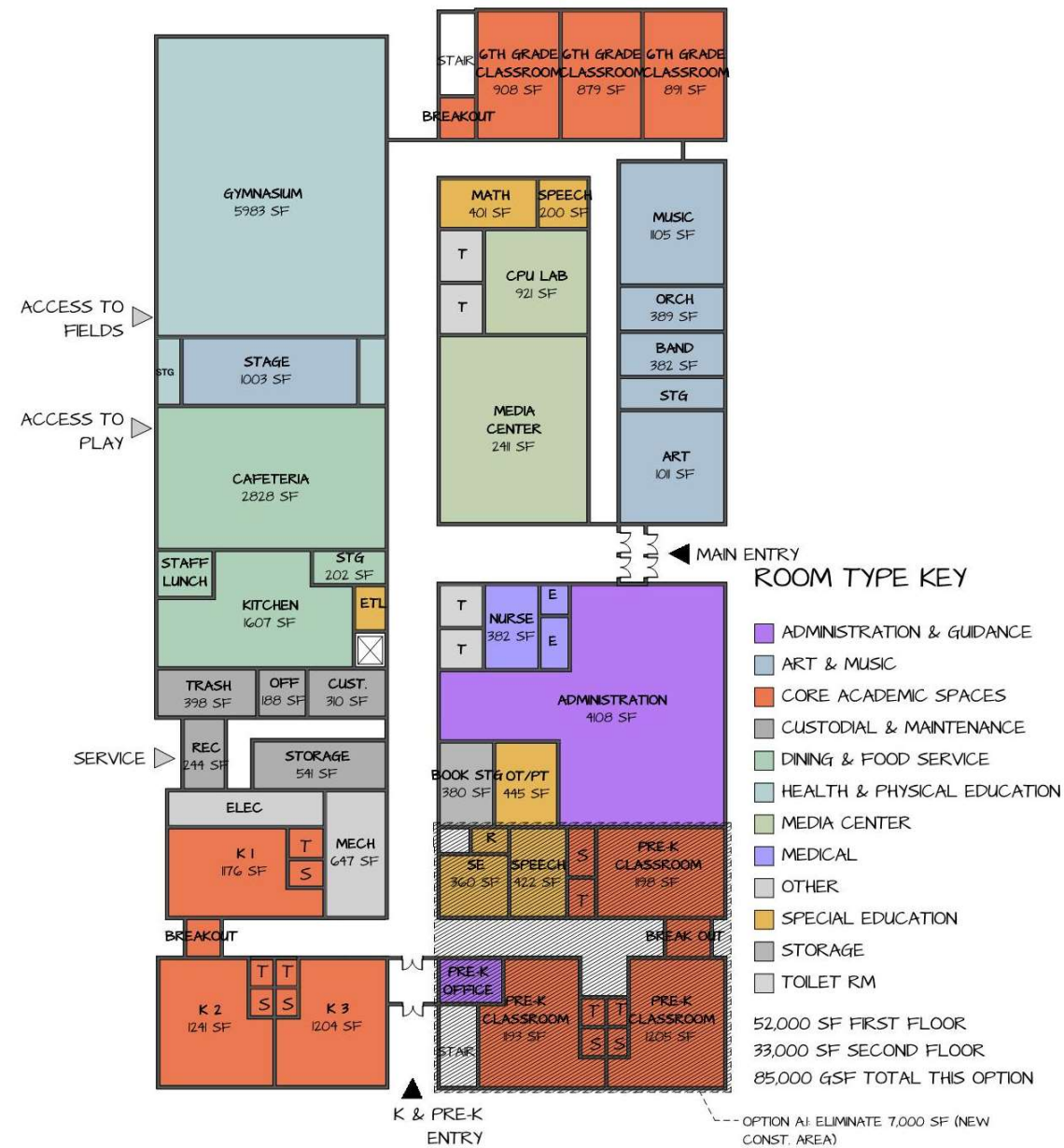


AMHERST FORT RIVER SCHOOL AERIAL VIEW OPTION A

DRAFT

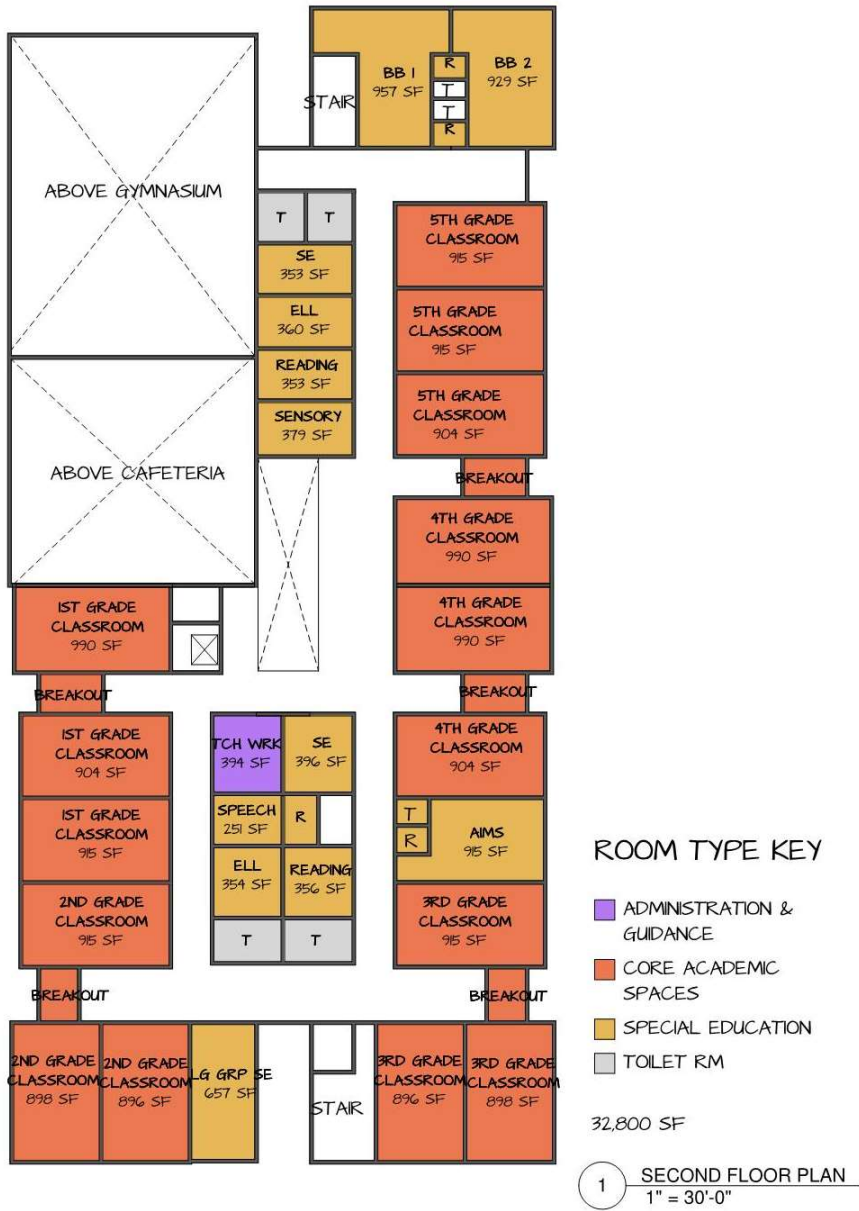


AMHERST, FORT RIVER SCHOOL SITE PLAN OPTION A



1 FIRST FLOOR PLAN
1" = 30'-0"

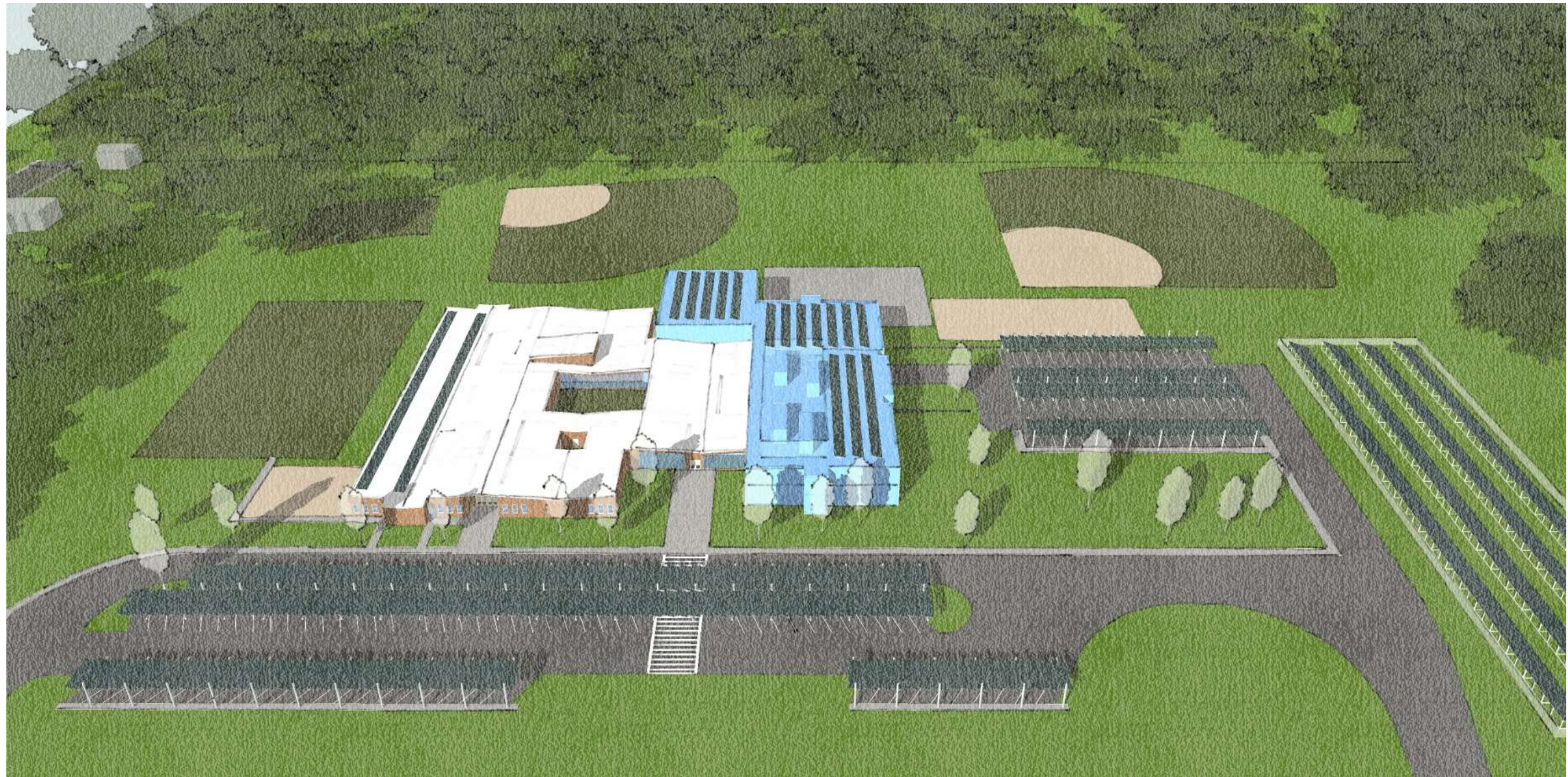
AMHERST, FORT RIVER SCHOOL
OPTION A, A.I



1 SECOND FLOOR PLAN
1" = 30'-0"

AMHERST, FORT RIVER SCHOOL
OPTION A, A.I

DRAFT



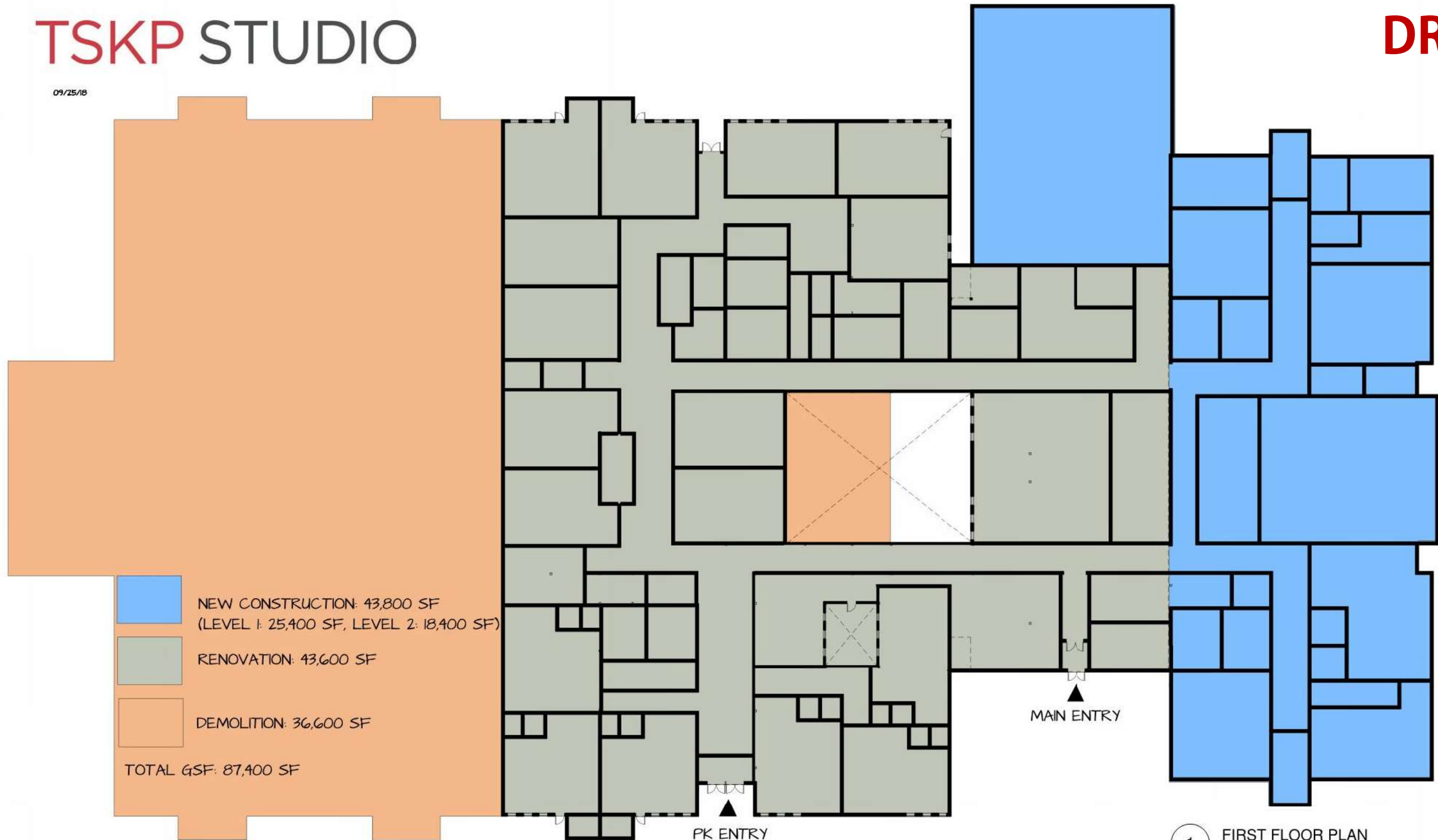
AMHERST FORT RIVER SCHOOL AERIAL VIEW OPTION B

DRAFT



AMHERST, FORT RIVER SCHOOL SITE PLAN OPTION B

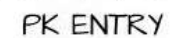
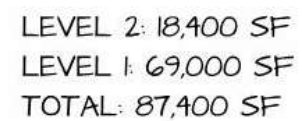
09/25/18



AMHERST, FORT RIVER SCHOOL NEW, RENO, DEMO, OPTION B

10/22/18

ACCESS TO FIELDS, PLAY



OPTION B, B.1

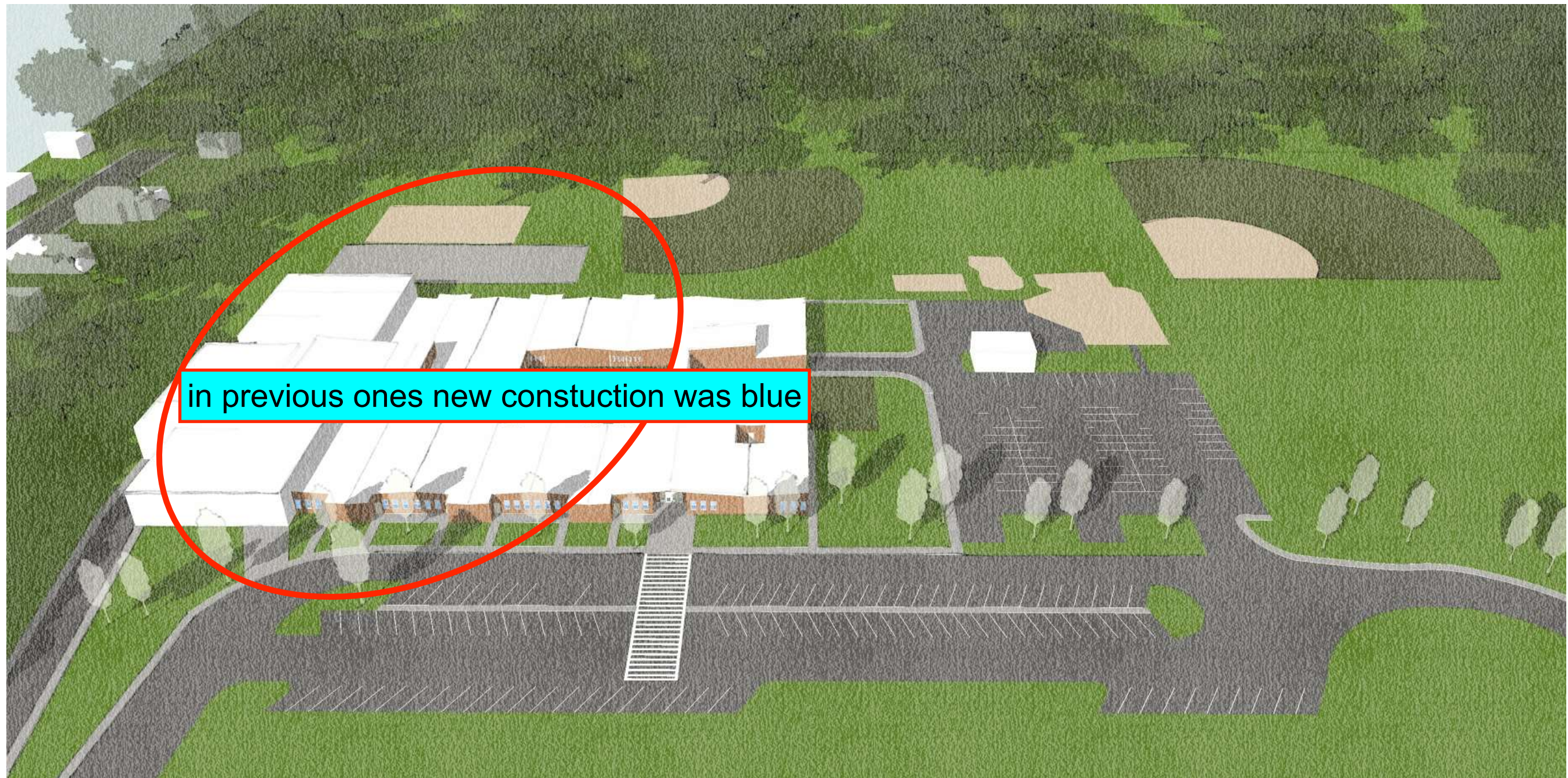


1 SECOND FLOOR PLAN
1" = 30'-0"

AMHERST, FORT RIVER SCHOOL

OPTION B, B.I

DRAFT



AMHERST FORT RIVER SCHOOL AERIAL VIEW OPTION C

DRAFT

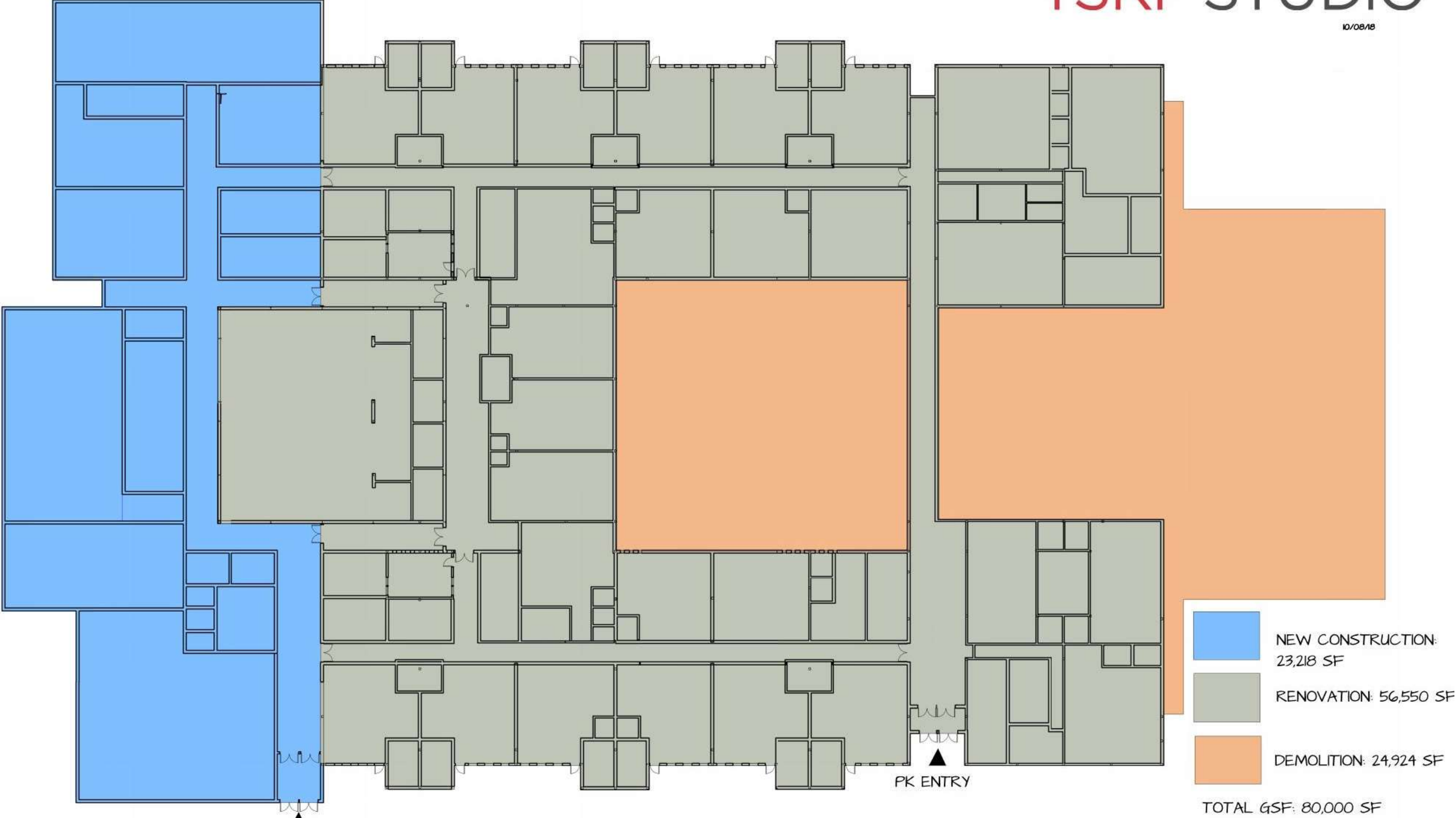


AMHERST, FORT RIVER SCHOOL SITE PLAN OPTION C

DRAFT

TSKP STUDIO

10/08/18



AMHERST, FORT RIVER SCHOOL NEW, RENO, DEMO, OPTION C

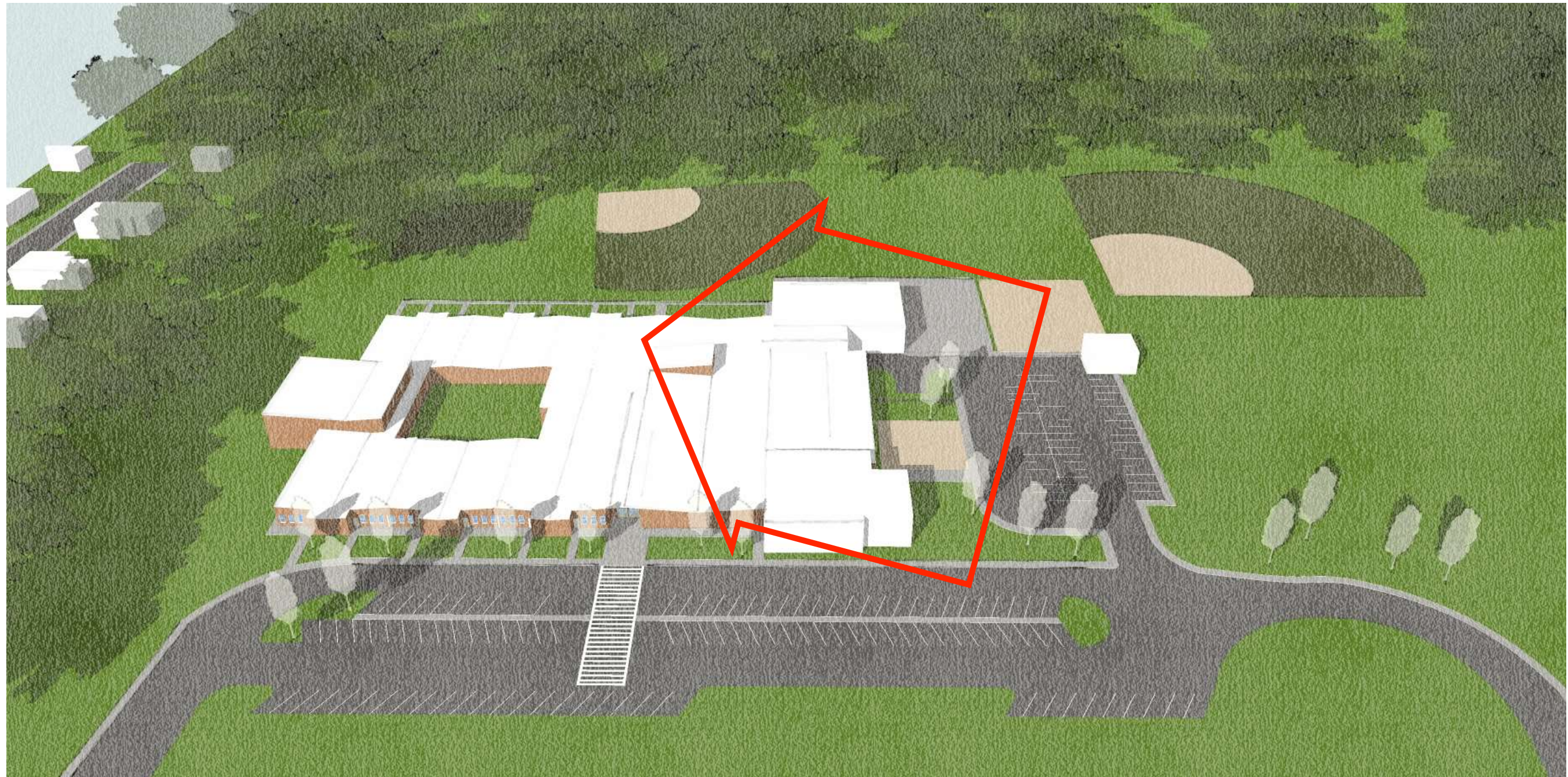
DRAFT



AMHERST, FORT RIVER SCHOOL

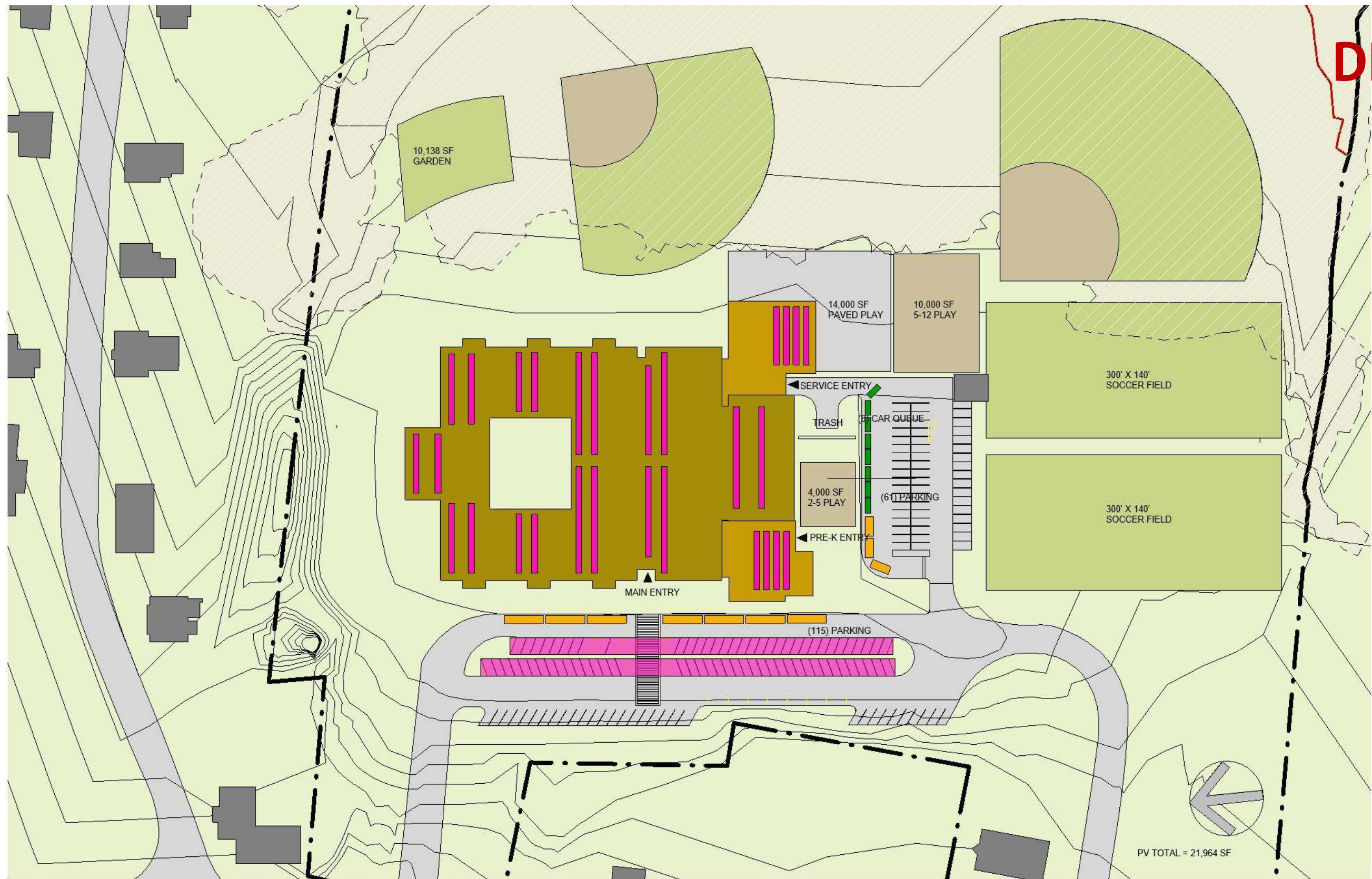
OPTION C, C.I

DRAFT



AMHERST FORT RIVER SCHOOL AERIAL VIEW OPTION D

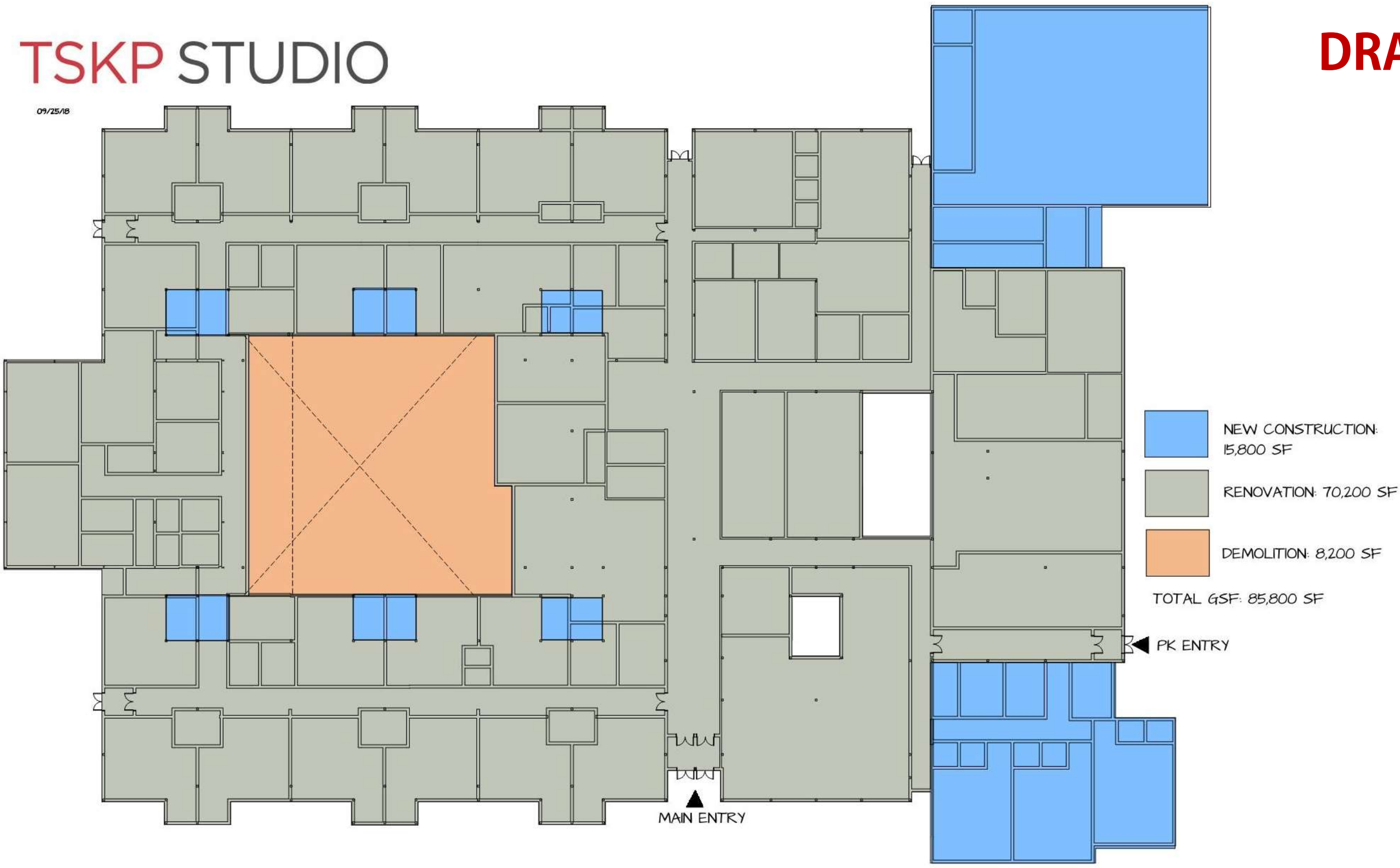
DRAFT



AMHERST, FORT RIVER SCHOOL SITE PLAN OPTION D

09/25/18

DRAFT



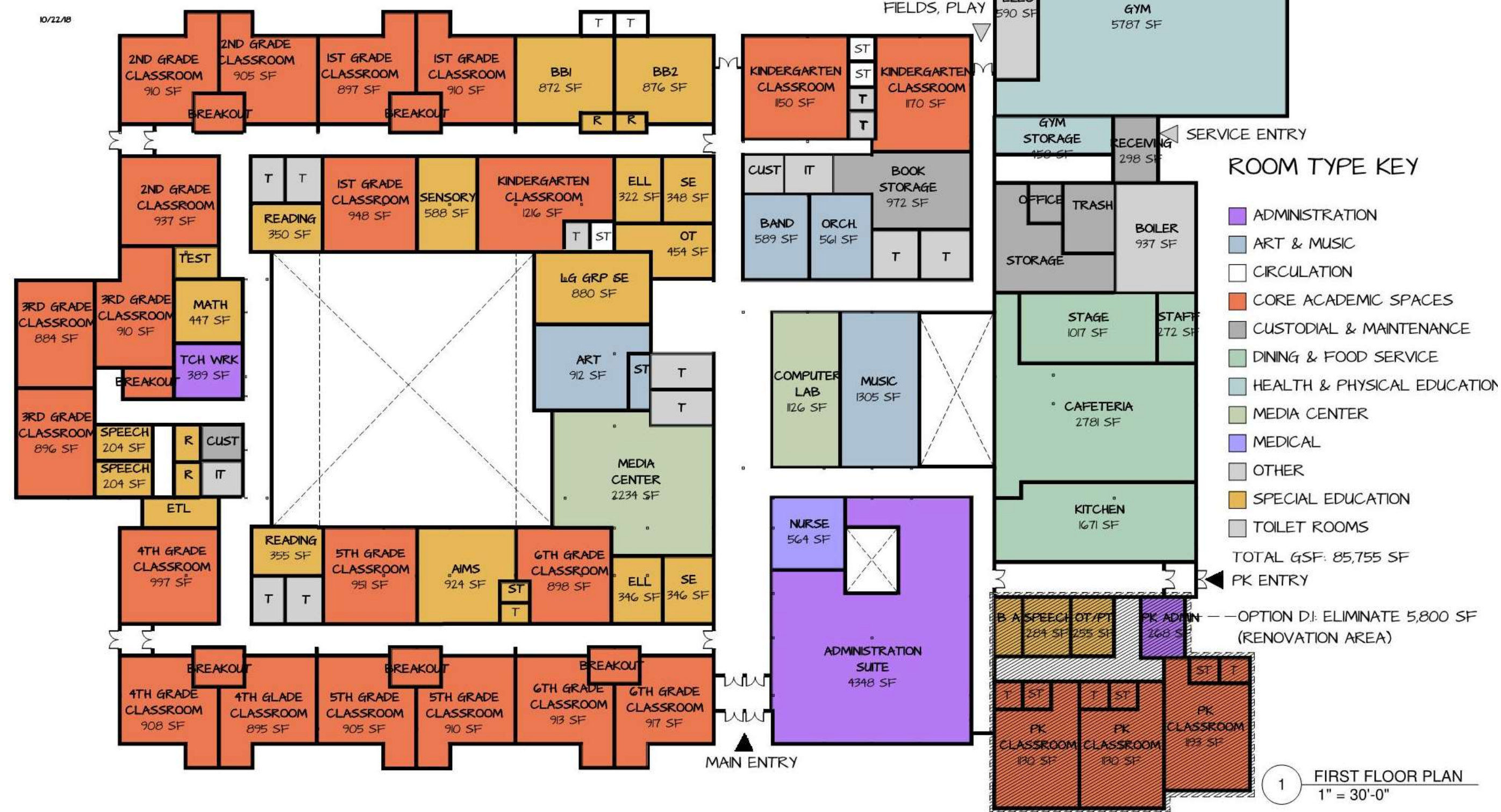
AMHERST, FORT RIVER SCHOOL

NEW, RENO, DEMO, OPTION D

DRAFT

TSKP STUDIO

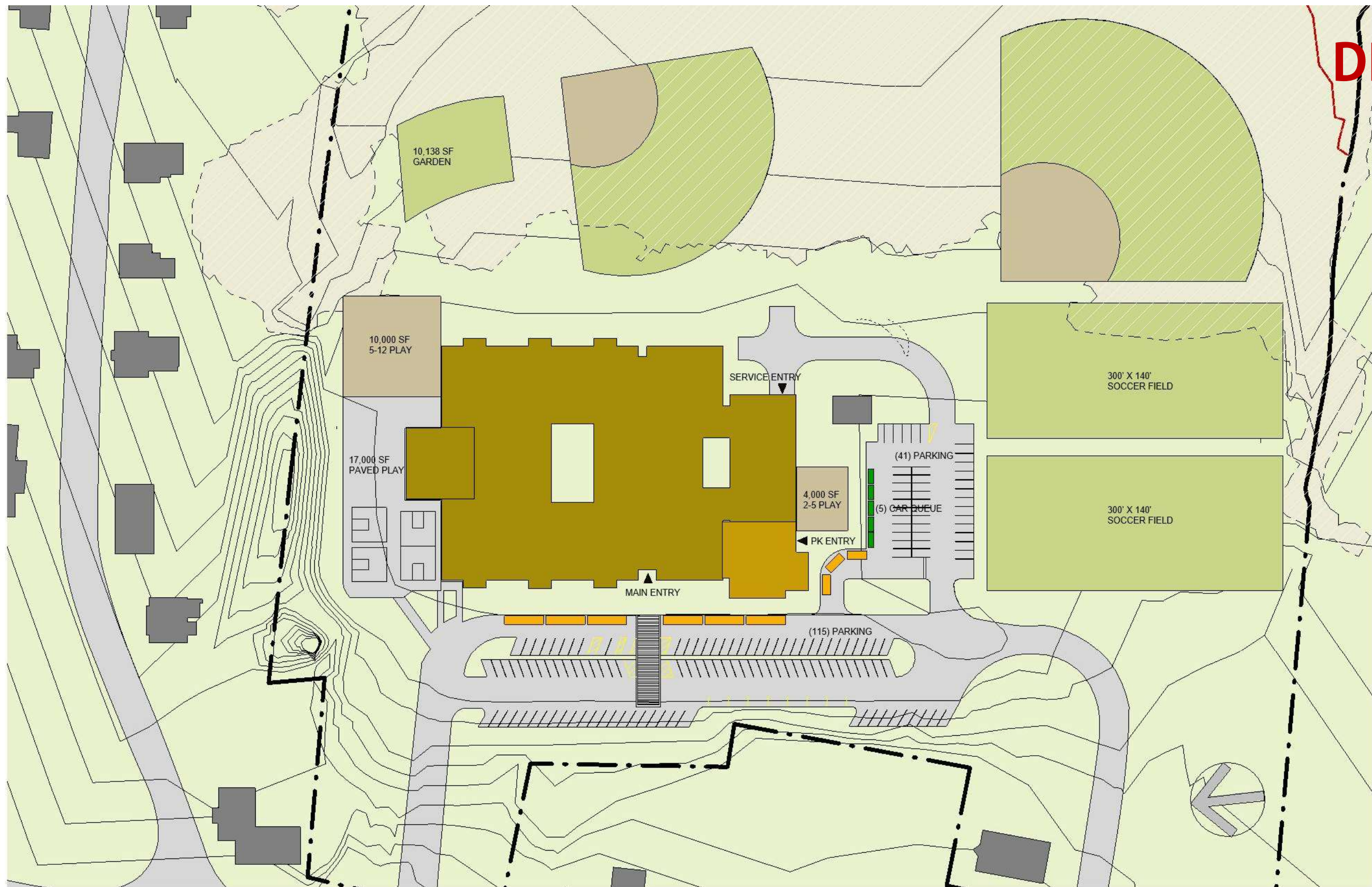
10/22/18



AMHERST, FORT RIVER SCHOOL

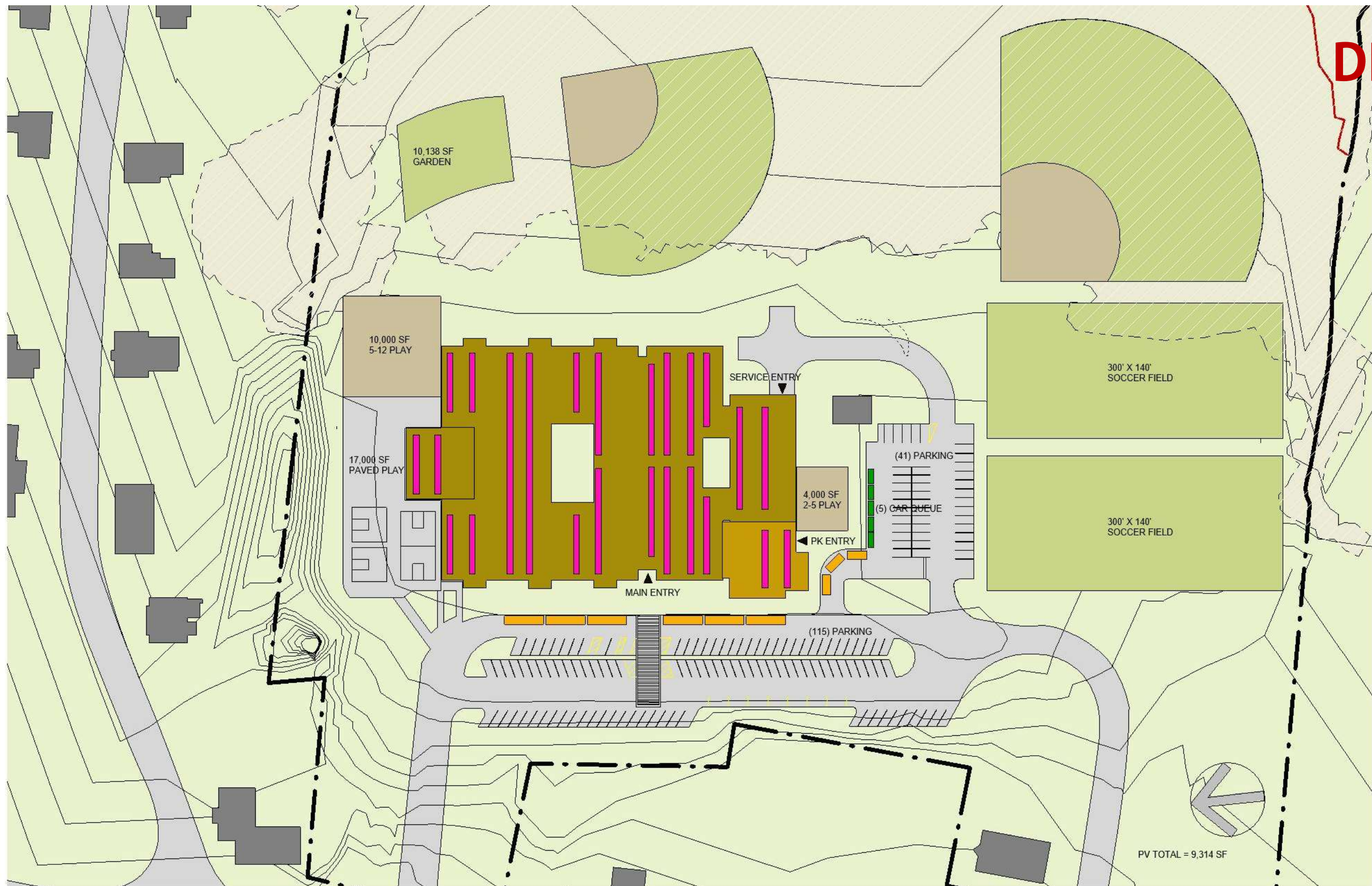
OPTION D, D.I

DRAFT

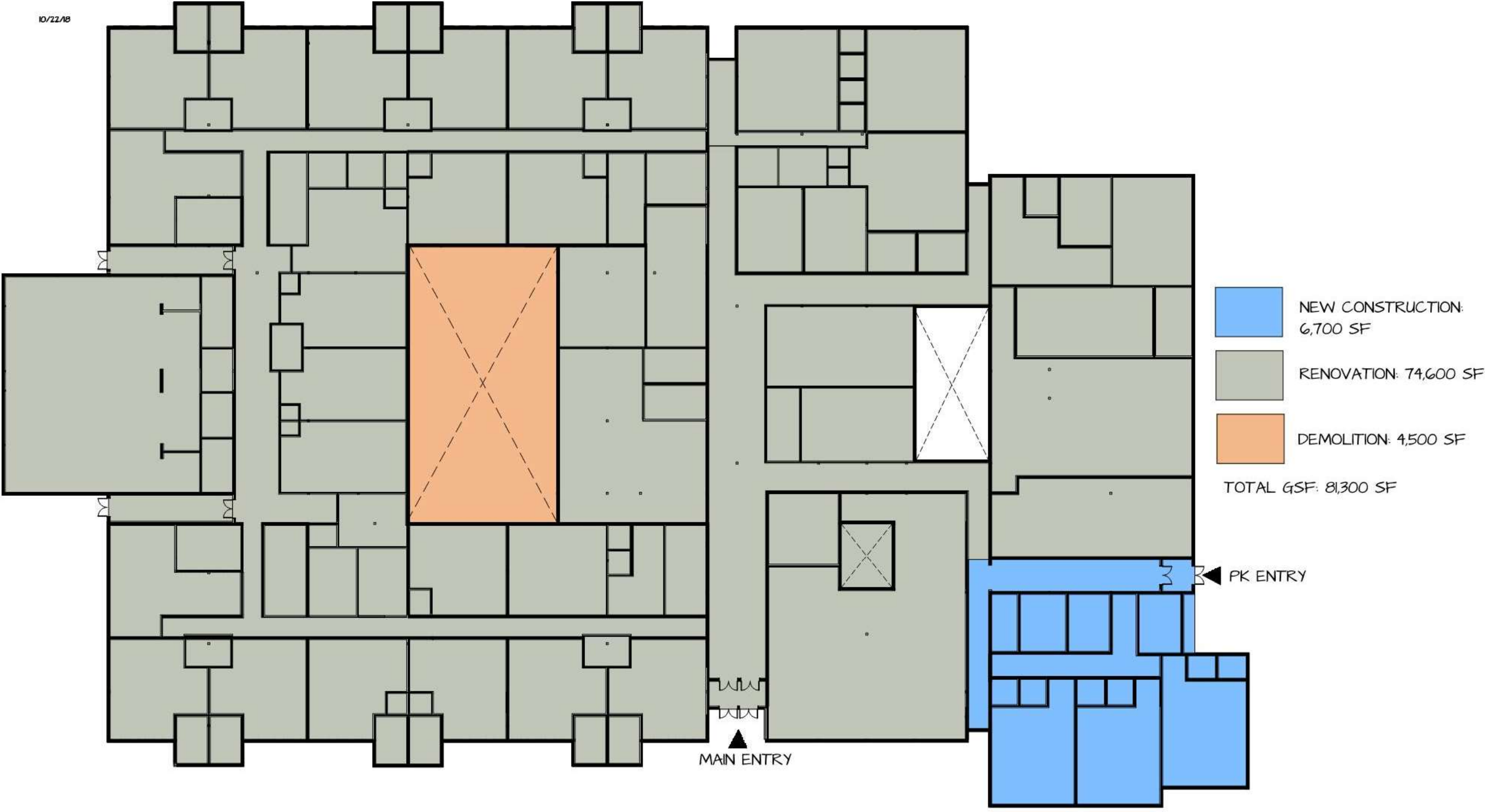


AMHERST, FORT RIVER SCHOOL SITE PLAN OPTION E

DRAFT



AMHERST, FORT RIVER SCHOOL SITE PLAN OPTION E















AMHERST, FORT RIVER SCHOOL NEW, RENO, DEMO, OPTION E

DRAFT

TSKP STUDIO

10/22/18

ROOM TYPE KEY

-  ADMINISTRATION
-  ART & MUSIC
-  CORE ACADEMIC SPACES
-  CUSTODIAL & MAINTENANCE
-  DINING & FOOD SERVICE
-  HEALTH & PHYSICAL
EDUCATION
-  MEDIA CENTER
-  MEDICAL
-  OTHER
-  SPECIAL EDUCATION
-  STORAGE
-  TOILET ROOMS

TOTAL GSF: 81,300 SF

PK ENTRY

- OPTION E: ELIMINATE 5,800 SF
(NEW CONST. AREA)

1 FIRST FLOOR PLAN
1" = 30'-0"

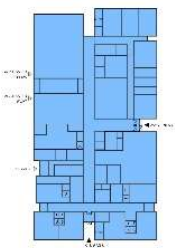
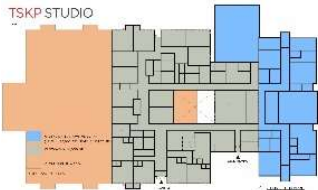
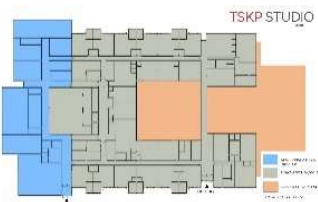
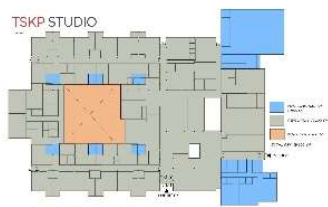
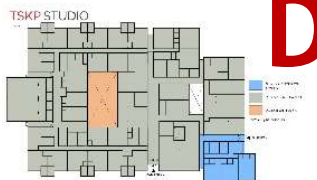
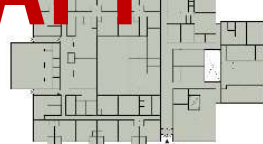
OPTION E, E.1

AMHERST, FORT RIVER SCHOOL

DRAFT



AMHERST FORT RIVER SCHOOL AERIAL VIEW OPTION E

	 <div>A</div>				 <div>B</div>				 <div>C</div>				 <div>D</div>				 <div>E</div>				 <div>F</div>	
	NEW				2 STORY ADDITION				SINGLE STORY ADDITION				MULTIPLE SMALL ADDITIONS				SMALL ADDITION				CODE REPAIR	
	A	A.1	A.2	A.3	B	B.1	B.2	B.3	C	C.1	C.2	C.3	D	D.1	D.2	D.3	E	E.1	E.2	E.3	F	
ENROLLMENT	465	420	360	315	465	420	360	315	465	420	360	315	465	420	360	315	465	420	360	315	315	
% NEW	100	100	100	100	50	53	55	59	29	31	32	35	18	12	18	12	7	0	8	0	0	
PRE-K INCLUDED?	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	N	
PROJECT COST (HVAC SYS #1)																						
PROJECT COST (HVAC SYS #2)																						
PROJECT COST (HVAC SYS #3)																						
PROJECT COST (HVAC SYS #4)																						
PROJECT COST (HVAC SYS #5)																						
PROJECT COST (HVAC SYS #6)																						
PROJECT COST (WITHOUT NZ)																						

DRAFT